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ABSTRACT

The report describes programs and equipment being evaluated by a project designed to identify and provide microcomputer based devices and materials for students with handicapping conditions. Software/courseware descriptions are organized according to copyright programs and public domain programs. Commercially available products are listed with descriptions and information on distributor, identification, and price, and include communication systems programs and switch controlled programs. Software in the public domain is described as well. The second section of the report covers the microcomputer or hardware system used (the Apple II Plus System) and its options for printer and speech. Adaptive devices which allow users to access the system (including switches, hardware interfaces and head printers) are described in terms of vendor, coded name, and price. (CL)

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ED235643

A RESOURCE MANUAL FOR THE DEVELOPMENT AND EVALUATION OF SPECIAL PROGRAMS FOR EXCEPTIONAL STUDENTS

VOLUME III-I:
Computer Assisted Instruction and Support for the Handicapped
Interim Report

State of Florida
Department of Education
Tallahassee, Florida
Ralph D. Turlington, Commissioner
Affirmative action/equal opportunity employer

EC 160 500

December 1982

This product was produced through a Special Project: Computer Assisted Instruction and Support for the Handicapped (CAISH), Title VI-B, funded by the Bureau of Education for Exceptional Students, Florida Department of Education, under Federal Assistance for the Education of the Handicapped (P.L. 91-230, EHA, Part B, as amended by P.L. 93-380 and P.L. 94-142).

The interim report was developed by the Sarasota County Public School System, Dr. James H. Fox Jr., Superintendent, Hurlic Coose, Director of Exceptional Student Education, and Warren R. Brown, Project Manager.

The interim report is one of a series of publications designed to assist Florida school districts in the provision of special programs for exceptional students. For additional information on this or other publications, contact the FI RS Clearinghouse/Information Center, Bureau of Education for Exceptional Students, Division of Public Schools, Florida Department of Education, Knott Building, Tallahassee, Florida, 32301.

Copyright
State of Florida
Department of State
1983

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INTRODUCTION

This interim report was developed by the Sarasota County Public Schools, Exceptional Student Education, under a grant funded by EHA VI, Part B, Special Project, through the Florida Department of Education. In order to supply the information incorporated herein in a timely manner, this document is being disseminated to selected district personnel prior to completion of the project. A final report will be available as a resource manual in 1984.

The project proposes to use systematic methods to identify and provide microcomputer based devices and materials which will meet the needs of students with specific handicaps. The approach is based on a four-part rationale:

1. Adaptive devices are required to facilitate communication for orthopedically impaired students during instruction.

2. Microcomputers can be interfaced with adaptive devices to create a highly interactive environment for orthopedically impaired students.

3. Computer-based learning methods are effective with and motivational to all handicapped students and can maximize teacher time.

4. Use of systematic methods can result in optimally useful instructional methods and products for handicapped students.

The report reflects the activities of the first year of funding (1981-82) which include the identification of available software/courseware, adaptation requirements, and purchase of selected hardware for instructional use with students who are orthopedically impaired. Special presentations by project staff to demonstrate and publicize the project at area and state conferences have created a demand for information on available software/courseware, hardware systems and adaptive devices. The preliminary report should not be considered a final product or an endorsement of any of the items listed. Ongoing project activities will result in specific recommendations for the use of adaptive devices, software and hardware with handicapped students.

Included in this report are descriptions of the software/courseware programs being evaluated by the project, specialized auxiliary hardware, adaptive devices or interfaces used, and the microcomputer system or hardware system selected.

Software which carries a copyright is listed in a separate section and includes the distributor's description and the cost of the program as of June, 1982. Public domain software includes a brief description of the program when available.

The Apple II Plus System was selected as the microcomputer system due to the availability of specialized instructional software, the adaptability

of accommodating specialized auxiliary hardware and interfaces, and its functional capacity. Prices listed reflect price at time of purchase, October through April, 1981-82.

No attempt has been made by Project CAISH to indicate instructional quality of software programs listed. Teacher evaluations of programs used in the project along with evaluations by project staff and outside consultants will be compiled for publication of the final resource manual as the basis for quality indicators and appropriateness for instruction for certain age groups and specific exceptional student programs. Consequently, the material contained herein should not be construed as "recommended" by either the Department of Education, Bureau of Education for Exceptional Students, or Project CAISH at this time.

SOFTWARE

The software which is being evaluated by Project CAISH is listed in two sections: Copyright Programs and Public Domain Programs.

Commercially available products which are copyrighted are listed with descriptive notations, distributor, identification and price. These include:

Communication Systems Programs

Word-Com/Picture-Com System
Talk II
Microcommunicator-Version C
Macro Typer 1.2
Talking Blissapple

Switch Controlled Programs

Motor Training Games
Academics with Scanning: Language Arts
Academics with Scanning: Math
Phonics, Texts and Graphics
Math Disk
Early Elementary I - Special Education
Single Switch Game Library
Hodge Podge
The Terrapin Logo Language
Special Needs - Volume I, Spelling
EZBAS Program
K-8 Software for Apple II

Public domain programs include listings with descriptions from:

University of Washington
South Dakota School for the Deaf
San Mateo Office of Education
Computer-Using Educators (CUE SOFTSWAP)
Sun Coast Computer Association (SCCA)
Michigan Area Computer Users Library (MACUL)
California School for the Deaf (BLOCKS)
Edmund Skellings
Microlab
Vagobonds Enterprises
Integer Basic Disk

Most public domain programs can be run using switch adaptation programs. In general the quality tends to be higher in the CUE Softswap and MACUL groups because those programs have been refined and in some cases user-tested. Apple II PLUS users can run programs labeled I, Integer Basic, if BRUN INTEGER BASIC-DISK (Public Domain) is run first. The BRUN INTEGER BASIC-DISK is available from Project CAISH.

The Florida Scanning Conversion Program allows a teacher to modify almost any public domain or unprotected program for single switch input. A scanning display will be presented in place of normal inputting routines. The student will have control of scanning speed. Some programming skills are required.

Copy-protected programs can be controlled only from the microcomputer keyboard unless a hardware device such as the Zygo Communication System is used. The Zygo unit allows row-column scanning of all keyboard characters and single switch selection. Every disk contains management control of up to 100 students. Content and style are excellent.

The software evaluation component will be expanded in the final report from the project. Appropriateness of use by age and handicapping condition will be indicated, as well as software content description. Evaluation forms on software are being distributed individually to persons requesting copies of programs, to assist in obtaining the broadest possible analysis of content and appropriate use. The evaluation forms are included in the Appendix of this report.

COPYRIGHT PROGRAMS

I. Communication Systems

A. Word-Com/Picture-Com System $ 460.00

This software allows printed or speech (Type 'N Talk) output. The student may select, in row-column scanning format, from 50 pages of words, alphabet and numbers, pictures, or Bliss Symbols, through use of single or multiple switches or joystick. See Appendix for I.O.R. Product List.

I.O.R. Enterprises
Route 6, Box 20
Chapel Hill, North Carolina 27514
919/929-4825

B. Talk II $ 90.00

This software allows printed or speech (Echo II) output. The student may select, from the keyboard, letters, phonemes, words, and phrases by single letter selection. Up to 500 sentences or words can be entered and modified by the user. See Appendix for Product List.

G. Evan Rushakoff
Clinical Microcomputer Laboratory
ASB 442, Speech & Hearing Clinic
Department of Speech
University of Florida
Gainesville, Florida 32611
904/392-2034

C. The Microcomputer--Version C (Child's Vocabulary) $ 39.00

This software consists of two major programs: Sentences and Make A Message. These programs allow the student to select from the keyboard, letters, words or sentences. Other options include siren, 10 beeps, or a song. Project CAISH has modified this program for speech output using Type 'N Talk. No agreement with the publisher has yet been made to make this modification available.

Grover & Associates
7 Mount Lassen Drive
San Rafael, California 94903
415/479-5906

I. Communication Systems (continued)

D. Macro Typer 1.2 $ 24.95

This software is designed to reduce the number of keystrokes required to generate a message. User-programmed words, phrases or sentences can be accessed by typing a "/" followed by a two-letter code (or macro). Project CAISH has modified this program for speech output using Type 'N Talk.

Sandy Bernstein
Post Office Box 16101
Plantation, Florida 33318

E. The Talking Blissapple $ 35.00

This software allows the student to use the micro-computer as a Bliss Symbol writing device. The latest version will also allow speaking the word associated with the selected symbol through Type 'N Talk. A 1400 symbol library is included. New symbols may be created. Eight interface modes (keyboard, single and multiple switches, Joystick or paddle) are available.

TRACE Center
314 Waisman Center
1500 Highland Avenue
Madison, Wisconsin 53706
608/262-6966

II. Switch Controlled Programs

A. Motor Training Games $ 10.00

B. Academics with Scanning: Language Arts $ 10.00

C. Academics with Scanning: Math $ 10.00

D. Phonics, Text and Graphics $ 10.00

E. Math Disk $ 10.00

The above programs were developed specifically for physically handicapped students. Descriptions may be found in the section "Public Domain Software."

Paul Schwejda, Judy McDonald
University of Washington
128 Northeast 52nd
Seattle, Washington 98195

II. Switch Controlled Programs (continued)

F. Early Elementary I - Special Education $ 29.95

A series of four programs: Count the Shapes, Color Match, Number Drill and Shape Match, that provide positive comments, graphics, and optional music reinforcement. Modified for single switch operation by Project CAISH.

Compu-Tations
Post Office Box 502
Troy, Michigan 48099

G. Single Switch Game Library $ 75.00

A group of 9 games modified for single switch scanning operation: Guess the Number, Hangman, Magic Cards, Samurai Sword, Checkers, Geography, Swords and Sorcery, Fur Trader, and Othello. The price shown is for all listed games.

G. Evan Rushakoff
Clinical Microcomputer Laboratory
ASB 442, Speech & Hearing Clinic
Department of Speech
University of Florida
Gainesville, Florida 32611
904/392-2034

H. Hodge Podge $ 21.50

Forty-five different visual-aural presentations can be randomly selected by single switch operation. This program encourages very young/severely handicapped students to explore cause and effect: hit the switch and the computer responds. Displays include animals, the alphabet, and graphics. Sound ranges from tunes to simple musical notes. The program was originally designed to generate something different for each key on the keyboard. Modified by Project CAISH.

Artworx Software Company
150 North Main Street
Fairport, New York 14450
716/425-2833

I. The Terrapin Logo Language $ 149.00

Logo is a procedural, interactive language that features "turtle geometry," an introduction to programming and a foundation for a computer-based mathematics curriculum. As written, the student is in control of the computer and the graphical path of a "turtle" by giving commands such as "forward" and "right." Logoscan is a program that controls the turtle geometry via single switch

row-column scanning of commands, and was written by Project CAISH. NOTE: (1) copyright and distribution policies have not yet been established; (2) a 16K RAM Card is required.

Terrapin, Inc.
678 Massachusetts Avenue, #205
Cambridge, Massachusetts 02139

J. Special Needs - Volume 1 (Spelling) MECC-727 $ 24.95

This diskette is designed to drill physically handicapped students on frequently misspelled primary and intermediate work. Students answer problems by either using the game buttons, the game turn knobs or any key on the keyboard. The support booklet gives the teacher instructions on changing the words and sentences.

Creative Computing
39 East Hanover Avenue
Morris Plains, New Jersey 07950

K. EZBAS Program $ 150.00

This program allows the handicapped student to program the microcomputer using single or multiple switch techniques. For additional information, see Appendix.

I.O.R. Enterprises
Route 6, Box 20
Chapel Hill, North Carolina 27514
919/929-4825

L. K-8 Educational Software for Apple II (varies)

A series of courseware in Reading-Language Arts (15 disks), Mathematics (9 disks), and Create Your Own Courseware (5 disks) with 9 disks requiring an interface (the CCD) to a cassette recorder. Project CAISH is in the process of modifying all of this courseware for single switch control.

Hartley Courseware, Inc.
Post Office Box 431
Dimondale, Michigan 48821
616/942-8987

III. Copy-Protected Programs

A.	Math Sequences, Grades 1-8	$ 450.00
B.	Language Arts, Grammar-Combined Set	$ 375.00
C.	Language Arts, Study Skills-Alphabetization	$ 75.00
D.	Reading Comprehension (pick from levels A-I)	$ 150.00 (per level)

Milliken Courseware is well-known and highly rated. Every disk contains management control of up to 100 students.

Milliken Publishing Company
1100 Research Boulevard
St. Louis, Missouri 63132
314/991-4220

Distributor:

Southern Photo and News, Inc.
1515 Marion Street
Post Office Box 503
Tampa, Florida 33601

Florida Toll Free:

1-800-282-2701

PUBLIC DOMAIN SOFTWARE

Every effort has been made to trace the owner or holder of each copyright. If any rights have been inadvertently infringed upon, project personnel agree to make the necessary corrections in subsequent editions.

UNIVERSITY OF WASHINGTON

MOTOR TRAINING GAMES

Age Level: Preschool through teen years or higher

Input Methods: 1 or 2 switches

People with severe physical disabilities should have the opportunity to enjoy and become familiar with use of a control switch before being asked to use it to perform complex academic or communication tasks. Disk includes 13 different motor training "games"--all of which may be operated by using only one or two motor movements. These games were designed to allow practice using one or two switches in a nonstressful context and to assist physical and occupational therapists in evaluating and refining the disabled person's motor abilities.

Programs: Random Tones, Random Colors, Colors/Tones, Davy's Digits, Frog & Fly, Anti-Aircraft, Tic-Tac-Toe, Bumper Cars, HiRes Drawing, LoRes Drawing, Free-Throw, A*B*C*Dragon, Word Burner, Word Burner Writer, Utilities

ACADEMICS WITH SCANNING: LANGUAGE ARTS

Age Level: Third through seventh grades

Input Methods: 1 or 2 switches

Students may use one or two motor movements to accomplish simulated "paper and pencil" language arts tasks with the computer. Programs include Word Attack, Crossword, and Phonics Machine. Teacher is to type in word lists (for student to syllabicate), crossword puzzle shapes, or phonics worksheets from student's OWN materials. Student uses one switch (Word Attack) or two switches (Crossword, Phonics Machine) to complete the work on the video screen and to produce printed work. Sample word lists, etc., included on disk, but teacher will need to provide own materials for student's level.

Programs: Word Attack, Word Attack Listwriter, Crossword, Puzzle Writer, Phonics Machine, Worksheet Writer, Utilities

ACADEMICS WITH SCANNING: MATH

Age Level: Third through seventh grades

Input Methods: 1 or 2 switches

Programs do not instruct students in math but allow the physically disabled student to use the computer as a pencil and paper to do math problems. Problems and/or worksheets are first typed in by the teacher or helper, then the student uses one or two switches to work the problems and to produce video and paper output similar to that produced by able-bodied peers.

Programs: Addition with Carrying, Subtraction with Borrowing, Multiple Digit Multiplication, Long Division, Constructive Geometry, Fractions, Fraction Worksheet Writer, Story Problems, Story Problem Worksheet Writer, Utilities

ACADEMICS PACKAGE: Set of two disks--Academics with Scanning: Language Arts and Academics with Scanning: Math

SPECIAL INPUTS DISK

Age Level: Fifth grade through adult

Input Methods: 1 or 2 switches OR keyboard and 2 switches

This disk contains various Special Input programs, including single-switch scanning (regular and step-scan); Morse code (may be sent with one switch OR two switches); and assisted keyboard (regular keyboard with two switches--one for "shift" key and one for "control" key), useful for people with headwand or one finger typing skills. Each input method includes every symbol and function on the computer keyboard and a repeat function as well.

While text writing with each method may be practiced with this disk, the primary purpose of Special Inputs is to load the input method first, then use that method to run programs designed for keyboard entry, such as our PHONICS, TEXT & GRAPHICS disk and the MATH disk. Some commercial or "off the shelf" disks may also be run with Special Inputs, though some modifications in the commercial programs may be required (instructions are included). For people who wish to use Special Inputs with the Apple Writer Text Processing System (©Apple Computer, Inc.), a program to make the necessary modifications to your Apple Writer is included.

Special Inputs could also be used with MOTOR TRAINING GAMES or the ACADEMICS disks to allow menu selection, etc., through a special input method. The switch operation of the programs called up would proceed in the usual way.

PHONICS, TEXT & GRAPHICS

Age Level: Third grade through adult

Input Methods: Keyboard OR Special Inputs Disk with 1 or 2 switches

Through the keyboard or any of the Special Input techniques (scanning, Morse code or assisted keyboard), the user may write, edit, save and

print text (Text Editor) or drawings (Drawing). A teacher may use Worksheet Writer to type in pages from student's own phonics workbook. Student then uses Phonics Editor to call up and complete worksheets. Several sample pages are included on the disk and a written tutorial is included to demonstrate use of the Phonics Editor program; teacher will need to type in own materials for student's level. Utilities program allows copying of disk and initializing of auxiliary disks for storage of text, drawings and worksheets.

NOTE: To use this disk with Special Inputs techniques, you must first use the Special Inputs disk.

MATH DISK

Age Level: Third grade through adult

Input Methods: Keyboard OR Special Inputs Disk with 1 or 2 switches

Through the keyboard or any of the Special Input techniques (scanning, Morse code or assisted keyboard), the physically disabled person may use the computer as a pencil and paper to do math problems. Math Drill* calls up preselected sets of math-fact problems for student practice. Math Editor is a mini-text editor with math functions--the user can put text on the screen (or the teacher can type in a story problem) and can select type of math problem to be performed. User then writes in the problem and does the work.

Also included on this disk are several programs from ACADEMICS WITH SCANNING: MATH--Addition with Carrying, Subtraction with Borrowing, Multiple Digit Multiplication, Long Division, Fractions, and Fraction Worksheet Writer (see previous description). For a person whose input method is scanning, the version on the ACADEMICS WITH SCANNING disk would be more efficient. For a person who is using Morse code or the assisted keyboard methods, however, the version on this MATH DISK would be more efficient. Utilities are included.

NOTE: Periodically it may be necessary to clean the microswitch contacts. For switches capable of handling large current, such as the Zygo microswitches, the tiny currents used in this application may not be enough to prevent some oxidation of the contacts. This can result in multiple signals. Clean the contacts by opening the switch case and using light sandpaper on the two metal surfaces which contact when the switch is pressed.

SPECIAL INPUTS PACKAGE: Set of three disks--Special Inputs; Phonics, Text & Graphics; and Math Disk.

* All high resolution test and associated effects in this program were generated using Higher Text software by Darrell and Ron Aldrich, copyrighted 1980, and available from Synergistic Software.

SOUTH DAKOTA SCHOOL FOR THE DEAF

*A 009 HELLO
*A 008 SPECIAL INPUTS
*B 012 SPCLRTS
*A 007 MENU
*A 016 PET PIT PAT POT
*A 021 A & AN
*A 016 SCRAMBLED WORD
*A 015 CINQUAIN
*A 018 HOME MORTGAGES
*A 018 SAVING & LOAN
*A 019 THE FUNCTION GAME
*A 021 MATH QUIZ
*A 015 ADDITION RACE
*A 012 IMPOSSIBLE FIGURE
*A 017 TRAP
*I 095 CALIFORNIA DRIVING TEST
*A 015 ADVANCED GUESS MY FRACTION
*I 038 CRYPTOGRAM
*I 028 PLOTTING POINTS
*A 021 BAGELS

CUE SOFTSWAP

APPLE DISSEMINATION DISK #1

ARTILLERY--Student selects trajectory to hit a target (S 8K) FP

CHRISTMAS TREE SONG/DECK THE HALLS--Plays "We Wish You a Merry Christmas" and "Deck the Halls" as words appear on screen (E/S 16K) INT

OREGON TRAIL--Simulates a pioneer wagon train trip from Independence, Missouri, to Oregon City, Oregon (E/S 32K) FP

STATES & CAPITALS--Fill-in blanks to identify states and their capitals (E/S 8K) FP

NATIONS & CAPITALS--Matching and fill-in blanks to identify nations and their capitals (E/S 8K) FP

GUESS MY FRACTION--Practice converting fractions to decimals (E/S 8K) FP

CONNECTION--Logic game for 2 players based on the commercial board game "Connect 4" (E/S 8K) INT

MULTIPLICATION--Player chooses to practice a specific multiplication table or practices mixed tables (E/S 16K) FP

MICROSCOPE--Drill program on parts of the microscope, using a HiRes microscope picture loaded from within the program (S 48K) FP

APPLE ROSE/FANCY ROSE--Plotting routine utilizing independent variables for the function R=SIN (N*THETA) (E/S 8K) FP

CHEMIST--Practice in ration and proportion using chemistry as a gimmick (S 16K) INT

REVERSE--Arrange digits 1 through 9 in correct sequence by reversing a selected number of digits (E/S 8K) INT

HANGMAN (FRENCH)--Traditional Hangman with instructions and words in French (E/S 8K) INT

HANGMAN FOR ONE--Word guessing game (E/S 8K) INT

TITRATION--Student neutralizes an unknown acid with a base of known concentration (S 8K) FP

MEET THE ROMANS--Practice converting Roman numerals to Arabic and reverse (E/S 8K) FP

APPLE DISSEMINATION DISK #2

PET PIT PAT POT--Guess the word from definition for a word starting with Pet, Pit, Pat or Pot (E 8K) FP

A & AN--Practice in using "a" or "an" (E 8K) FP

SCRAMBLED WORD--Unscramble letters to spell the word (E/S 8K) FP

CINQUAIN--Demonstrates what a cinquain is and gives student an opportunity to create a poem (E/S 32K) FP

HOME MORTGAGES--Practice in computing mortgage data (S 8K) FP

SAVINGS AND LOANS--Computes interest values at varying interest rates (S 8K) FP

THE FUNCTION GAME--Program presents a function and a target number; user must identify two numbers which will yield target number when put into the function (S 16K) FP

MATH QUIZ--Random math problems in levels of difficulty (E/S 8K) FP

ADDITION RACE--Two students race on individual sets of addition problems (E/S 16K) FP

IMPOSSIBLE FIGURE--Draws figure in hi-res graphics which defies laws of perspective (E/S 8K) FP

TRAP--Number guessing game requires the development of strategy to guess a number in the least possible tries (E/S 16K) FP

CALIFORNIA DRIVING TEST--Multiple-choice questions on California traffic laws (S 32K) INT

ADVANCED GUESS MY FRACTION--Practice converting fractions to decimals by guessing a fraction selected by the computer (E/S 8K) FP

CRYPTOGRAM--Practice in solving puzzles (E/S 8K) INT

PLOTTING POINTS--Demonstrates first quadrant plotting (S 32K) INT

BAGELS--Classic number guessing game (E/S 8K) FP

APPLE DISSEMINATION DISK #3

FORECAST--Gives forecast for data entered, and converts to metric if necessary (S 48K) FP

SINE WAVES--Graphs curve for values input by user (S 32K) FP

GRAPHICS GAME--Two players compete in plotting lines using BASIC commands to make a rectangle (E/S 8K) INT

SEQUENCES--Computer presents a sequence of 5 numbers; user predicts next number (E/S 16K) FP

MUSIC GENERATOR--Composes music from information input user (S 16K) INT

NAME THE STATES--Student types names of states from memory (E/S 8K) FP

MULTIPLICATION BINGO--Multiplication tables drill (1 through 9) with correct answers filling in a BINGO card (E/S 16K) FP

FLASHCARD--Student selects operation to practice math facts within time limits (E 16K) INT

DYNOMATH--Math facts practice in addition and subtraction (E/S 16K) INT

EQUATIONS--Demonstrates the graph of a quadratic equation (S 8K) INT

GEOGRAPHY--Word game using geographic names of nations, states, world cities, oceans and rivers (E/S 8K) FP

SURVIVAL--Multiple-choice quiz on survival tactics (E/S 16K) FP

LAF ISLAND--Survival simulation game based on cooperative action (E/S 16K) FP

APPLE DISSEMINATION DISK #4

DISTANCE--Program teaches how to calculate the distance between points on a straight line graph; uses hi-res graphics (S 32K) FP

CHARGE--This is the Milliken Oil Drop Experiment; user enters voltage and must determine charge on stopped drop (S 8K) FP

PLANK--Given the frequency of x-rays being used, user determined voltage necessary to decrease collector current to zero (S 8K) FP

MIDPOINT-- Teaches how to find midpoint of a line segment; uses hi-res graphics (S 48K) FP

GUESSING GAME--The computer will guess your number or letter (E/S 8K) INT

MAD CHEMIST--Uses ratio and proportion to mix chemicals; lo-res graphics (E/S 8K) FP

X-Y GRAPHER--Graphs equations of the form Y=(function of X); hi-res graphics (S 48K) FP

STAR LANES--Simulates business world, buying and selling interstellar trading lanes (E/S 16K) FP

ADD-LIBS--Like "Mad Libs," with user entering parts of speech to create humorous stories (E/S 32K) INT

MATH SPELL--Spelling of math-related words (E/S 8K) FP

SLOPES--Teaches how to calculate slope of a line segment; hi-res graphics (S 48K) FP

ECO-SIMULATION--The classic "Graze-Huntington simulation" of the interaction among cattle, birds and grassland (E/S 8K) FP

CRAYFISH--Test on crayfish external anatomy; hi-res graphics (S 48K) FP

MATH DICE--User adds, subtracts, multiplies and divides the numbers on 5 dice to get the highest score; simulated graphics (E/S 8K) FP

APPLE DISSEMINATION DISK #5*

ROAD TRIP--Hi-res graphics simulation of a trip from Dullsville to Greenstone Park. You have a car, $200 and a map. Your goal is to complete the 900 mile trip in two days. As you drive, you see the scenery and the road ahead, the road behind (in the rear view mirror), and the dash-board of the car. You must make decisions about which routes to take and the amount of money to spend for gas, food and lodging. You must also be able to handle unexpected events. (E/S 48K) FP

POWERSAT--Hi-res graphics energy resources simulation. You are in charge of supplying all of the materials for the solar panel assembly phase of a power satellite. You must decide how to provision your space shuttle for each flight, what fuel to use (nuclear, coal, natural gas, oil), and what cargo to carry. You will be required to dock your shuttle on the space platform, using keyboard commands. (E/S 48K) FP

MOONWALK--Hi-res graphics simulation. Your mission is to rendezvous with the mother ship in the Mare "Nectaris" on the moon. Uses keyboard commands to move about on the moon. (E/S 48K) FP

NOTE: These programs are available in DOS 3.3 only. These programs will not run until HIGHER TEXT has been added to this disk. Instructions: (1) Use the FID program on your DOS 3.3 System Master disk, and (2) Boot the System Master, type BRUN FID, and choose Option #1 (copy files)

* For information on this disk contact: Jay Dean, College of Education
University of Minnesota
130 Classroom-Office Building
1994 Buford Avenue
St. Paul, Minnesota 55108

from the FID menu. The FID program will then give you directions to transfer the two files, HIGHER TEXT and LOMEM.

HIGHER TEXT is available for $32.50 from: Synergistic Software
5221 120th Avenue, S.E.
Bellevue, Washington 98006
(and other computer stores)

WARNING: HIGHER TEXT is a copyrighted program. It is illegal to make copies of this disk after HIGHER TEST has been added.

APPLE DISSEMINATION DISK #6*

ASSERTIVENESS TRAINING--As you go through a school day you respond to various situations. Your responses determine your assertiveness rating. (S 32K) FP

TIC TAC ADD--Tic tac toe-like game where user picks a box and solves the problem displayed. Lo-res graphics gameboard. (E 16K) FP

PERIMETER & AREA DRILL--Student finds perimeter or area on either a square, rectangle or triangle. Figures are shown in lo-res graphics and length of sides is randomly generated. (E/S 16K) FP

FOOTBALL--Two teams choose offensive and defensive plays to simulate a game. Ball moves on field and scoreboard shows results. (E/S 16K) FP

LINEAR EQUATIONS--Computer graphs an equation (e.g., 4X + 2Y = 8) then helps student to solve the equation for Y, and to develop a table of X and Y values. Students can then enter other equations and graph them. (S 16K) FP

LOGIC PRACTICE--Logic quiz asks students to choose "either/or," "if/then," or "subgrouping." Pre and posttests included. (S 16K) FP

VOWEL SEARCH--Practice in identifying vowels, short vowel in one syllable words, long vowel with silent E in one syllable words. (E 16K) FP

ALPHABET ANTICS--Student types the letter to match the letter shown, follow the letter shown, find previous letter in alphabetical order, fill in middle letter in a three letter alphabetical sequence. (E 16K) FP

THE COLT RACE--Two students solve decimal division problems to win a race. (E/S 16K) FP

* For information on this disk contact: Marley Watkins
Deer Valley Unified School
District #97
2501 West Morningside Drive
Phoenix, Arizona 85023

APPLE DISSEMINATION DISK #7

BATNUM--A Nim-type game in which the player sets the rules. Player versus computer. (E/S 16K) FP

MINDWARP--Lo-res graphics mastermind game, keyboard driven, player can set options. (E/S 32K) INT

JIG-SAW PUZZLE--Lo-res 9 piece puzzle which exchanges pieces to solve the puzzle. Keyboard driven. (E/S 16K) INT

WUMPUS 2--Hunt the wumpus for treasure. Mental grid game. (E/S 16K) FP

REACTOR--Locate invisible atoms in the reactor by firing the particle gun. User can set difficulty level. (E/S 32K) FP

TEXT OTHELLO--Classic board game with you against the computer. (E/S 32K) FP

JOTTO--Guess the five-letter word by guessing five letters at a time. (Similar to Mastermind) (E/S 16K) FP

FOLLOW ME--Test your visual and auditory memory by repeating the sequence of notes and colors. Lo-res graphics with 1 or 2 players. (E/S 16K) INT

CLOUZOT--Solve the mystery by questioning witnesses. A different mystery for each game. (E/S 32K) FP

LIFE--Graphic depiction of successive generations. Enter different patterns and try to create a stable population. (S 16K) INT

PETALS AROUND THE ROSES--Deduce the nature of an object depicted by the throw of five dice. (E/S 32K) FP

TOWERS OF HANOI--Lo-res grpahics game. Move the graduated stack of disks from one pile to the next, one at a time. (E/S 16K) INT

IQ TEST--Word puzzles (e.g., $\frac{\text{man}}{\text{board}}$ = man overboard). (E/S 16K) INT

YAHTZEE--The classic game with 1 to 5 players (one can be the computer). (E/S 32K) INT

GIANT TYPEWRITER--Type messages in large letters with lo-res graphics. (E/S 32K) INT

In the following listings the computer language of the program is indicated as follows:

A - Apple II Plus
T - Textfilm
B - Binary
I - Integer Basic

It should be noted that the BRUN INTEGER BASIC DISK allows Apple II Plus users to run programs labeled I.

MICHIGAN AREA COMPUTER USER'S LIBRARY (MACUL)

SECONDARY IDENTIFICATION 1

A	HELLO	B	EDUCATIONAL VOL. 1.1
A	AIRFOIL	I	ENGINE
A	BOGGLE	T	GRADE 4 UNIT 2
A	CIRCLE AND DISK PLOTTER	A	LESSON 1 (INTRO TO APPLE)
T	CORRECT WORDS 4	I	MENU-INT
A	EDIT FLASH WORD FILES	I	MOIS
A	EDIT PROOF READING FILES	B	MOIS SEARCH DATA
A	PROOF READING IN SPELLING	A	STATES CAPITOL II
A	READABILITY LEVEL TEST	T	WRONG WORDS 4
A	SPELLING FLASH WORD TEST	B	INTEGER BASIC-DISK
A	STAR	T	A
A	STATES & FACTS	A	MENU

SECONDARY IDENTIFICATION 2

A	HELLO	I	INTEGER RENUMBER/APPEND
I	B/BSTAT	I	LOCK DISK
I	BSTAT	A	LOW RES FLASHING PERFECT
T	CAPTURE (P.76 DOS)	A	LOW RES GREAT
A	CATALOG SELECTOR (FP)	A	LOW RES PERFECT
A	CONTROL CHARACTER FINDER	A	LOW RES WAY TO GO
A	COPY	A	MAKE TEST (P.61 DOS)
I	COPY-2 CONTROLLERS	A	MENU WRITER
B	COPY.OBJ	A	OUT OF MEMORY (P.136 MANUAL)
T	COPYEXEC	A	PRESS SPACE BAR TO CONTINUE
A	COPYEXEC MAKER	T	PRESS SPACE TO CONTINUE (EXEC)
B	CTRLFIND	B	PRINTER DRIVER (P.28 MANUAL)
B	DISK COPY (LHS)	A	RETRIEVE TEXT (P.65 DOS)
B	DISK MAP	I	SLOW MEM TEST
I	DISK PROGRAM ELIMINATOR	I	SWEET 16 DISSEMBLER
I	FAST MEM TEST	I	TEXTCOPY
I	MENU-INT	I	TEXTFILER
A	FILE CABINET (FIXED?)	A	TIMER
A	FIX CATALOG	I	TOM'S SPLIT CATALOG
A	FORMAT-SUBROUTINE	B	UTILITIES VOL. 1.1
B	FREE	B	INTEGER BASIC-DISK
A	HEAPSORT	T	A
A	HEX TO DECIMAL CHART	A	MENU

SECONDARY IDENTIFICATION 3

A	HELLO	A	MATRIX INVERT
A	AREA UNDER THE CURVE	A	MATRIX MULT
B	CHAIN	I	MENU-INT
I	COLOR MATH	A	MIXED
A	CUBE PLOTTER	A	PRIME FINDER
A	FINDING ROOTS USING PADDLES	A	REDUCE
A	FRACOP1	A	SAILBOAT
A	FRACOP2	B	SHAPES
A	FRACTION DRILL	A	STRONG'S AREA UNDER 1/X
I	GROUP AVERAGER	A	TRAPEZOIDAL RULE
A	IMPROP	A	WAVES

SECONDARY IDENTIFICATION 3 (continued)

I MAKING CHANGE
B MATH VOL. 1.1
B MATH VOL. 1.0
B INTEGER BASIC-DISK
T A
A MENU

SECONDARY IDENTIFICATION 4

A HELLO
B ALLEY CAT
I ANDY'S TOONS-INT
B BACH
I FLAG-INT
A HI-RES LISSAJOU
I MELODY-INT
I MSU-INT
I MULTI TONE-INT
I MUSI-GUESS-INT
I MUSIC-INT
A MUSIC SUBROUTINE
I MUSIC SYN-INT
B MUSIC VOL. 1.0
B NOTES 2
A MENU
B SMALL SMALL WORLD
I SOUNDEFFECTS-INT
I U OF M-INT
B INTEGER BASIC-DISK
T A
T B
T C
T D
T E
T F
T G
T H
T I
T J
A ANDY'S TOONS
A FLAG
A MELODY
A MSU
A MULTI TONE
A MUSI-GUESS
A MUSIC
A MUSIC SYN
A SOUNDEFFECTS
A U OF M

SECONDARY IDENTIFICATION 5

A HELLO
I ANIMATIONS
I BATTLESHIP
I COLOR DEMO
I COLORSKETCH
I EIGHT-QUEENS
I GAMES
B GAMES VOL. 1.0
I HAMMURABI
I INTRO
I IQ TEST
I KEYBOARD DRAW
A STARWARS BATTLE
I SUPER HIRES CHESS
I TOWERS OF HANOI
I TTT
B INTEGER BASIC-DISK

SECONDARY IDENTIFICATION 6

A HELLO
A THE WONDERFUL WORLD OF EAMON
B EAMON.PIC
A NEW CHARACTERS
A MAIN HALL
A INIT
A EDIT CHARACTERS
T EAMON.DESC
T EAMON.NAME
T EAMON.ROOMS
T EAMON.ROOM NAMES
T EAMON.MONSTERS
T EAMON.ARTIFACTS
A THE BEGINNERS CAVE
A BEGINNERS CAVE--32K
A ROOM SETUP
A ROOM NAMES SETUP
A DESC EDIT/CREATE
A MONSTER/ARTIFACT SETUP
A ROOM VIEW1
A ROOM VIEW2
A SETUP FOR 32K
T CHARACTERS
T FRESH MEAT

SECONDARY IDENTIFICATION 7

A HELLO
B APPLE-DAYTON MENU 2.1/48K
B AUTOBOOT 16
A AUTOSCALE - 6 PAK
B BPI
B CHARACTER TABLE
A DECISION HELPER (U OF M)
A EULER - 6 PAK
B HI-RES CHARACTER GENERATOR
A INSTRUCTIONS - 6 PAK
A INTEGL - 6 PAK
A INV TRIG GRAPHS
A L2ORDR - 6 PAK
A LINEAR INEQUALITY
B LOMEM-
I MENU-INT
A NEW CONICS
A NEWTON - 6 PAK
A PARABOLA SHADING
A PARABOLA TUTORIAL
A PI
A PLOTFP - 6 PAK
A POLAR EQUATION PLOTTER
A QUADRATIC FACTORING DRILL
A QUADRATIC GRAPHING
A RATIONAL FUNCTION GRAPHER
A ROMAN NUMERAL ARITHMETIC
A SERIES - 6 PAK
A SIMULTANEOUS EQUATION SOLVER
A SIXTHDART (BERGER U OF M)
A SYNTHETIC DIVISION
A TESTMAKER
A TESTMAKER DEMO
A TEXTPRINT
A TRIG FUNCTION GRAPHER
I UPDATE 16
B VOLUME 7.0
B INTEGER BASIC-DISK
A MENU
T A

SECONDARY IDENTIFICATION 8

A HELLO
A BASKETBALL
A CIRCUS
A COLOR WORD RECOGNITION
A COMPUTER MAN
A DISCO DANCER
A FROST JH LOW RES PICTURES
A GAS DIFFUSION
A GROWING FLOWERS
A HAMMER HIT
A JACKPOT SLOT MACHINE
A KNIGHTS TOUR
A LOW RES ALPHABET QUIZ
A LOW RES DUMP
I MENU-INT
A OCTOPUS
A PENDULUM
A PISTON ENGINE DEMO
A PROBABILITY DEMO
A RAINBOW
A RED POP FACTORY
A SLOT MACHINE
A SNAKE CHARMER
A TARGET
B VOLUME 8.0
A WHALE
B INTEGER BASIC-DISK
A MENU
T A

SECONDARY IDENTIFICATION 9

A HELLO
A BIG DIPPER
B BOX29
A CAMERA DEMONSTRATION
B CANADA
B CRAYFISH
A FACTORING
B GRASSHOPPER
B HEART
A HEART DISPLAY
B HEART2
A HI RES RUNNERS
I HYDROCARBONS
B INSECT
A LOCATOR FOR GRASSHOPPER
I LONG SPLIT CATALOG
A MAGIC SQUARE GENERATOR
I MENU-INT
A PETAL GAME
A PIC DISPLAY
A PIZZA DELIVERY GAME
A POLYGON AREA AND GRAPH
A QUARTER CIRCLE PI GENERATOR
A RABBIT & WOLVES
A READABILITY D.P.
B VOLUME 9.0
A WORD SCRAMBLER
B INTEGER BASIC-DISK
T JOE
T GIGO
A MENU
T A

SUNCOAST COMPUTER ASSOCIATION (SCCA)

SECONDARY IDENTIFICATION 10

A HELLO
T LETTERS
I COLOR MATH
I DRIVER'S TEST
I EDUCATION GAMES
I ENGINE
B MENU
I MORSE CODE
I SUPERMATH
I HANGMAN
I LETTER RECOGNITION
I SHAPES
I GUESS MY WORD
A BONE TUMOR DIAGNOSIS
A CALCULUS
A DECISION MAKER
A DERIVATIVE OF AN EQUATION
A DIFFERENTIAL EQUATIONS
A EQUATIONS
A SIMULTANEOUS EQUATIONS
A TRAIN
A MOD MATH
A PLANETS
A FLASH CARDS
A BUSINESS MANAGEMENT

SECONDARY IDENTIFICATION 11

A HELLO
B MENU
I SECRET MESSAGE
I MUSICAL MATH TEACHER
I PHOTOGRAPHY CAI
I PHOTOGRAPHY QUIZ
I ING ENDINGS
I LONG DIVISION
I MORSE CODE INSTRUCTOR
I SCRAMBLE
A KINEMA
A FLASH CARDS

SECONDARY IDENTIFICATION 12

A HELLO
B MENU
A COMM PRIMER
I NOAH'S ARK
I MORSE.CODE
A CELL
I STATES AND CAPITALS
I HANGMAN 2
A SOCIAL READJUSTMENT
I G/BRAIN TEASER
A SPOKEN NUMBERS (48K)
A HI-Q
I QUESTION GAMES
I TYPING ROUTINE
I COLORMATH (SPEECHLAB)
A APPLE II DEMO

SECONDARY IDENTIFICATION 13

A HELLO
B MENU
A D/URSA
I D/HAIKU POETRY C.A.I.
I G/BAGELS/CLOCKS/20QUESTIONS
I G/LEGACY/TAKEIT
I G/BEGINNER
I G/HEADS
A RADIOACTIVE
B RADIO
A PLANETS/IMPROVED VERSION
A BAD PLANETS
A WORD GAME

SECONDARY IDENTIFICATION 14

A HELLO
A LESSON #1-1
A LESSON #1-2
A LESSON #2-1
A LESSON #5-3
A LESSON #6-1
A LESSON #6-2
A LESSON #7-1

SECONDARY IDENTIFICATION 14 (continued)

A LESSON #2-2
A LESSON #3-1
A LESSON #3-2
A LESSON #4-1
A LESSON #4-2
A LESSON #4-3
A LESSON #4-4
A LESSON #5-1
A LESSON #5-2
A LESSON #7-2
A LESSON #7-3
A LESSON #8-1
A LESSON #8-2
A LESSON #9-1
A LESSON #9-2
A LESSON #9-3
B MENU

SECONDARY IDENTIFICATION 15

A HELLO
A SPEED READING
A DOS FILE TUTORIAL
I TYPING PRACTICE
I MORSE CODE II
I COLORMATH II
I MATH TUTOR
I MORSE TRAINER II
I FLASH CODE
I FLASHCARD
I E/HOP-HOPPING
A GRADES STARTER
A GRADE MAINTENANCE
B MENU
A CHEMIST

SECONDARY IDENTIFICATION 16

A HELLO
I APPLE HELLO
I QUIZBUILD
T SEQUENCE.EASY
I QUIZ
T SEQUENCE.HARD
T US.CAPITALS
T EUROPEAN.CAPITALS
T ASIAN.CAPITALS
T MISSPELL
T SHAKESPEARE
T BABY.ADULT
T VICTIM.KILLER
T CANADA.PROV
T AMERICAN.CAPITALS
T MALE.FEMALE
T PRESIDENTS
T AFRICAN.CAPITALS
T OPPOSITES
T ELEMENTS
B MENU

SECONDARY IDENTIFICATION 17

A HELLO
B MENU
I INTEGER BASIC TUTORIAL
I BASIC PROGRAMMING I
I BASIC PROGRAMMING II
I BASIC PROGRAMMING III
I BASIC PROGRAMMING IV
A FOOD DTA MAKER
A HOUSE DTA MAKER
A MISC.DTA MAKER
A PEOPLE DTA MAKER
I VOCABULARY REVIEW
I VOCAB MOD1
I PIZZA
T HOUSE
T MISC.
A PLACES DTA MAKER
A THINGS1 DTA MAKER
A THINGS2 DTA MAKER
A SPANISH TUTOR 1.1
I MORSE 3.2.1
I MUSIC PRACTICE
A SIMON
T FOOD
I STATE CAPITALS
A BIGNUMS
A RARE BIRDS
T PEOPLE
T PLACES
T THINGS1
T THINGS2

SECONDARY IDENTIFICATION 18

A HELLO
A SAYINGS
A BRUTUS
A COIN PROB
A PLOT LINE
A CIRCLE H-K
A COMPLETE PROB LISTING
B MENU
A LINE
I CALCULATOR START
I CALC1
B TALK
B NUMBERS
I LONG DIVISION
I DIVISION
I MULTIPLY
I MATH PRACTICE

SECONDARY IDENTIFICATION 19

A HELLO
I AAA MATH & STATISTICS 173
I AAA MESSAGE
I ADDITION AND GRAPHICS
I ADDITION AND SOUND 1
I ADDITION AND SOUND 2
I ADDITION DRILL
I BESSEL FUNCTIONS
I BRAIN BUSTERS
I COIN TOSS
I FRACTION TO DECIMAL
I LIGHT PEN 3 DEMO
I LIGHT PEN MATH DEMO
I MATH AND MUSIC
I MATH DIVISION 2
I MATH DIVISION 3
I MATH DIVISION CALC 1
I MATH DIVISION CALC 2
I MATH DRILL EASY
I MATH DRILL HARD
I MATH FLASH CARD
I MATH HEX QUIZ
I MATH IN COLOR 1
I MATH IN COLOR 2
I MATH MULTIPLY 2 NUMBERS
I MATH MULTIPLY CALC
I MATH SUPER
I MATH TUTOR
I NUMBER LOGIC
I PI 1
I PI 2
I SQUARE & CUBE A NUMBER

SECONDARY IDENTIFICATION 20

A HELLO
I AAA ELECTRONIC & RADIO 074
I AAA MESSAGE
T MORSE CODE DATA
I MORSE CODE DRILL
T MORSE CODE EXEC
I MORSE CODE EXEC WRITER
I MORSE CODE FLASH
A MORSE CODE INTERPRETER
I MORSE CODE PRACTICE
I MORSE CODE READER
I MORSE CODE RECEIVE
I MORSE CODE SEND ALPHAMERIC
I MORSE CODE SEND CHARACTERS
I MORSE CODE SEND MESSAGE
A MORSE CODE SENDER
I MORSE CODE TEACHER
A MORSE CODE TEACHER KELTZ
I MORSE CODE TRAINER
I MORSE CODE TRUSTY
A MORSE CODE TUTORIAL
I MORSE CODE WRITER
A CLASS GRADER

SECONDARY IDENTIFICATION 21

A HELLO
A AAA EDUCATION & SCHOOL 066
A AAA MESSAGE
I ALPHABET & SOUND
A CLASS BOY GIRL RATIO
A TEST MAKER MULTI CHOICE
I TYPING PRACTICE
A TYPING PRACTICE-NEEDS WORK
A X-AVERAGES
A X-DATE

SECONDARY IDENTIFICATION 21 (continued)

A	CLASS GRADE BOOK	T	X-E.FILE
A	CLASS GRADER INITIALIZE	T	X-FILE
A	FINAL GRADE	A	X-FILE INIT
A	FINAL GRADE DOC	I	X-GRADING INSTR
A	FOURTH GRADE DEMO	I	X-INTRO NEEDED
I	LETTER DISCRIMINATION	I	X-SCHOOL MENU NEEDED
I	SPELL ING	B	X-SCHOOL1
A	STUDENT GRADE AVERAGE	I	X-SCHOOLFILE
A	STUDENT HEAD COUNT	A	X-STUDENT NAMES
A	STUDENT HEAD COUNT DOC	A	X-STUDENT NAMES GRADES
I	TEST IN WOODWORKING	A	X-TEST GRADES
A	TEST MAKER	A	CLASS GRADER

SECONDARY IDENTIFICATION 22

A	HELLO	A	FOOT CANDLE ANALYSIS
A	AAA MATH & STATISTICS 172	A	FOURIER
A	AAA MESSAGE	A	FOURIER TRANSFORM
A	ANGLO TO METRIC I	A	GAUSSIAN QUADRATURE II
A	ANGLO TO METRIC II	A	MATH DRILL I
A	ARCSIN ARCCOS	A	MATH DRILL II
A	CALCULATOR	A	MATRIX INVERSION II
A	CALCULUS I	A	MATRIX OPERATION
A	CALCULUS II	A	MEAN VARI STDR DEVIA II
A	CASH REGISTER	A	MODE FINDER
A	CIRCLE AREA CIRCUM	A	N FACTORIAL
A	COMPOUND INTEREST	A	PLOT CONSECUTIVE REACTIONS
A	CRITICAL PATH ANALYSIS	A	PLOT FUNCTIONS OF X
A	CURVE FIT I	A	PROG CHART ?
A	CURVE FIT II	A	ROBOT MOTOR DESIGN
A	CURVE FIT III	A	SINE FUNCTION
A	DERIVATIVE OF EQUATION	A	STATISTICS I
A	DIFFERENTIAL EQN SOLVER	A	STATISTICS II
A	EQUATION SOLVER	A	T TEST STDN DEVIATION
A	EQUATIONS I	A	TIME SPEED DISTANCE EXERCISE
A	EQUATIONS II	A	TIME SPEED DISTANCE FUEL
A	FACTOR	A	TRIANGLE SOLVER
A	FIBONACCI NUMBERS	A	UNPAIRED GROUP COMPARISON

SECONDARY IDENTIFICATION 23

A	HELLO	A	TTEST
A	STABIL	A	TYPING
A	STAT	A	USECON
A	STAT1	A	USPOP
A	STDEV	A	WAVES
A	STERL	A	WAVESP
A	STOCK	A	WHEELS
A	SUMER	B	CHAIN
A	TAG		

SECONDARY IDENTIFICATION 24

A	HELLO	A	ATGW
A	AFLIFE	A	BANK
A	AGHSGP	A	BATNUM
A	AGHSG1	A	CHARGE
A	AGHSG2	B	CHAIN
A	ATG	A	CHISQS
A	ATGE	A	CORMAT
A	ATGIB	A	CREDIT
A	ATGM	A	CRIMEX
A	ATGM1		

SECONDARY IDENTIFICATION 25

A	HELLO	T	MATH
B	INTBASIC	T	RUN
I	APPLESOFT	T	NMATH
B	FPBASIC	T	SMATH
A	TYPING PRACTICE	T	SOCIAL STUDIES
A	GRADES	T	NSOCIAL STUDIES
T	ART	T	SSOCIAL STUDIES
T	NART	A	INEQUALITY TUTORIAL
T	SART	T	SPELLING

SECONDARY IDENTIFICATION 26

A	HELLO	A	EVAL. DETERMINANT - 3 X 3
A	POLY4	A	EVAL. DETERMINANT - 4 X 4
A	LIMITS	A	QUADRATICS
A	GPOLY4	A	QUADRANTS
A	CONICS	A	PI
A	EXP-LOG FUNCT.	A	FIBONACCI SEQUENCE
A	PROBABILITY COMPUTATIONS	A	COVER VER.2
A	GENERAL SINE-COSINE	A	COVER VER.1
A	SIMPLE SIN-COS	A	MORTGAGE
A	STATISTICS	B	HOUSE
A	TAYLOR SERIES	A	BALL
A	CRAMER'S RULE - 3 UNKNOWNS	A	GRAPH
A	CRAMER'S RULE - 2 UNKNOWNS	A	SQUARES
A	CRAMER'S RULE - 4 UNKNOWNS	A	PENDULUM
A	LINEAR GRAPHING		

SECONDARY IDENTIFICATION 27

A	HELLO	A	FARME
A	CURFIT	A	FARREM
A	DECAY1	A	FUNCTN
A	DECIML	A	GENE1
A	DRIP	A	GENE2
A	ESTMAT	A	GENE3
A	FACPAC	A	GRAZE
A	FARMA	A	HAIKU
A	FARMC	A	HARDY
A	FARMC1	B	HGRPRNT
A	FARMD	B	CHAIN
A	FARMD1		

SECONDARY IDENTIFICATION 28

A HELLO
A PAY
A PH
A PHOSYN
A POLSYS
A POP
A PROMAC
A QUBIC
A RANK
A RATS
A RKINET
A SAP
A SCATR1
A SCATR2
A SCATR3
A SCHDL1
A SCHDL2
A SHELTR
A SIMEQN
A SLITS
B CHAIN

SECONDARY IDENTIFICATION 29

A HELLO
A HORT
A IPSINFO
A IPS22
A IPS27
A IPS32
A IPS34
A IPS41
A IPS61
A IPS64
A IPS87
A IPS92
A KEYBRD
A KINET
A LECHAT
A LOCKEY
A MALAR
A MARKET
A MASPAR
A MORGAG
A MYFCO
A MYFC1
A MYFC3
A MYFC4
A MYFC5
A MYFC6
A MYFMO
A MYFRND
A MYFRO
B CHAIN

HARDWARE SYSTEM

The microcomputer or hardware system selected for project CAISH is the Apple II Plus System with the following components:

Disk Drive
Color Monitor
Adaptive Device Interface
Multiple Outlet Center
Computer Console
Typewriter Pad

Printer options and speech options were added to the system to meet individual needs of students and are itemized for reference. Speech options include instructions for installation. Also listed are three items of Optional Specialized Hardware.

Addresses and telephone numbers given for system components vary between the national distribution center and local vendors, depending on availability. Information concerning availability of components in a given area can be obtained from the national office or from local dealers. A computer console unit was designed to house component parts of the system. A draft plan of the console is available on request.

MICROCOMPUTER SYSTEM

1. Microcomputer: Apple II Plus System - 48K RAM A2S1048 — $1,530.00

   Apple Computer Inc.
   10260 Bradley Drive
   Cupertino, California 95014
   408/996-1010

2. Disk Drive: Disk II Floppy Disk & Interface (DOS 3.3) A2M0048 — $ 645.00

   Apple Computer Inc.
   10260 Bradley Drive
   Cupertino, California 95104
   408/996-1010

3. Monitor: Amdek - Color 1 — $ 449.00

   Amdek Corporation
   2420 East Oakton Street, Suite E
   Arlington Heights, Illinois 60005
   312/364-1180

4. Adaptive Device Interface: Caffelle Model 100 — $ 20.00

   Caffelle Marketing
   5336 Winewood Drive
   Sarasota, Florida 33582
   813/371-2332

5. Multiple Outlet Center: Electripak 464538 — $ 18.88

   Scotty's, Inc. (Part Number MOC-6C)
   325 School Avenue
   Sarasota, Florida 33577
   813/953-4080

6. Typewriter Pad: Rubbermaid #S3-1807-BGE — $ 4.85

   The Downtown Store
   1500 Main Street
   Sarasota, Florida 33577
   813/365-9200

PRINTER OPTION

1. Printer: Epson MX-80 — $ 745.00

   Epson America, Inc.
   3415 Kashiwa Street
   Torrence, California 90505
   213/378-2220

2. Parallel Interface Card: Epson 8131 — $ 85.00

   Epson America, Inc.
   3415 Kashiwa Street
   Torrence, California 90505
   213/378-2220

3. Interface Cable: Epson 8230 — $ 35.00

   Epson America, Inc.
   3415 Kashiwa Street
   Torrence, California 90505
   213/378-2220

4. Paper: Size 8½" by 11", 1 part — $ 30.00 to $ 40.00

   Form #9811
   Graphic Industries Inc.
   Uniontown, Ohio 44685

Desirable, but not required:

5. Bit Plot Graphics capability: Epson Graftrax 80 — $ 95.00

   Epson America, Inc.
   3415 Kashiwa Street
   Torrence, California 90505
   213/378-2220

6. Graphic Software: Computer Station 7585 — $ 45.00
   Enhanced Graphic Software for the Epson MX-80/100 Printers

   Computer Stations, Inc.
   11610 Page Service Drive
   St. Louis, Missouri 63141
   314/432-7019

SPEECH OPTION

1. Speech Synthesizer: Votrax 100 Type 'N Talk $ 345.00

   Votrax, Division of Federal Screw Works
   500 Stephenson Highway
   Troy, Michigan 48084
   800/521-1350

   Installation:

   Connect power supply connector to POWER. With a small screwdriver, very carefully push little switch 8 down at BAUD SELECT switch. Switches 1 through 7 should be up.

2. Serial Card: SSM ASIO Apple Serial I/O Interface $ 139.00

   SSM Microcomputer Products, Inc.
   2190 Paragon Drive
   San Jose, California 95131
   408/946-7400

   Installation:

   Install three (3) small plastic jumpers vertically at 4800 (upper left) and X2-E7 (lower middle) and E2-E3 (upper middle board location). Plug in cable connector to TERMINAL pins with red stripe on the right.

3. Cable: Mountain Computer 01-00213-01, 6' cable $ 24.95
   DB-25 Male to DB-25 Male

   Mountain Computer Inc.
   300 El Pueblo Road
   Scotts Valley, California 95066
   408/438-6650

   Installation:

   Plug one end into connector from serial card and the other end to speech synthesizer SERIAL PORT.

4. Cable: Radio Shack, Catalog Number 422-420

   Radio Shack
   Sarasota Square Mall
   Sarasota, Florida 33581
   813/922-4248

   Installation:

   Plug one end into SPEAKER jack at speech synthesizer. Plug other end into AUDIO IN at monitor. Make sure microcomputer is OFF! Plug serial card into microcomputer slot 5. Run cable out of one of the large slots in the rear. Plug in speech synthesizer power supply power cord. Push ON/OFF switch on speech synthesizer to the inward position (ON).

The following is needed only if the Communication System "Talk II" is purchased.

5. Speech Synthesizer: Street Electronics Echo II $ 225.00

Street Electronics Corp.
3152 East LaPalma Avenue, Suite C
Anaheim, California 92806
714/632-9950

Installation:
Make sure microcomputer is OFF! Connect speaker plug into socket on card. With a small screwdriver, adjust volume control to mid range. Plug card into microcomputer slot 3. Run speaker cable out of one of the large slots in the rear.

The following is listed for reference. Its speech quality is very high, but all of the words or sounds must be stored. This storage limits the number of seconds of sound available.

6. Speech Synthesizer: Mountain Supertalker SD200 $ 300.00

Mountain Computer, Inc.
300 El Pueblo Road
Scotts Valley, California 95066
408/438-6650

Installation:
Make sure microcomputer is OFF! Connect speaker plug to SPEAKER OUTPUT on card. Connect microphone plug to MICROPHONE INPUT on card. Plug card into microcomputer slot 5. Run cables out of one of the large slots in the rear.

OPTIONAL SPECIALIZED HARDWARE

1. 16K RAM Card: $ 100.00 to $ 200.00

   Local vendors

   Required for using LOGO language.

2. CPS Multifunction Card: 01-00214-01 $ 239.00

   Mountain Computer, Inc.
   300 El Pueblo Road
   Scotts Valley, California 95066
   408/436-6650

   Serial and parallel peripheral drivers with built-in real-time clock.

3. Telecommunications MicroModem II $ 379.00

   Hayes Microcomputer Products, Inc.
   5835 Peachtree Corners East
   Norcross, Georgia 30092

ADAPTIVE DEVICES

Adaptive devices include interfaces which allow the user to access the microcomputer system. It is that portion of a system with which the person directly interacts to make the device work. A major feature of the interface is that it must be responsive to the capabilities of the individual.

Switches represent one major class of interfaces which are responsive to a motor activity of the person. Overt motor activity is not the only behavior that can be interfaced. If a person can sip or puff air, the change of air flow can be made to control a switch. The controller connects the interface to an output device which generates the desired result. It may be made up of a combination of electronic and mechanical components and translates the signal from the interface into machine functions. A variety of switches needs to be available for trial to insure that a student can access the computer in the most efficient manner.

The adaptive devices which have been used in Project CAISH are described by vendor, coded name and price. Switches, hardware interfaces and a head printer are identified as the most commonly used adaptive devices. Additional information concerning the adaptive devices listed is included in the Appendix.

ADAPTIVE DEVICES

I. SWITCHES

1. ZYGO Industries

Florida purchasers order from:

MEDCO Surgical Supply Company
19491 Northeast 22nd Road
North Miami Beach, Florida 33179
305/532-9326, 212/740-9100

CM-1-2 Tread Switch	$ 30.00
CM-2-2 Leaf Switch	$ 35.00
CM-3-2 Pneumatic Switch	$ 41.00
CM-4-2 Touch Switch	$ 55.00
CM-7-2 Short Leaf Switch	$ 35.00

2. Input-Output Research Enterprises (I.O.R.)
Route 6, Box 20
Chapel Hill, North Carolina 27514
919/929-4825

SWHA Push Button	$ 15.00
SWHB Gooseneck Treadle	$ 25.00
SWHC Position	$ 20.00
SWHD Cushion	$ 20.00
SWHE Eyebrow	$ 30.00
SWHF Treadle	$ 15.00
SWHG Light Touch	$ 15.00

3. Prentke-Romich Company
R. D. 2, Box 191
Shreve, Ohio 44676
216/567-2906

ASC-5 Arm Slot Control	$ 146.00

II. Communication System: Row-Column Switching - Hardware Interface

1. ZYGO Industries

Florida purchasers order from:

MEDCO Surgical Supply Company
19491 Northeast 22nd Road
North Miami Beach, Florida 33179
305/532-9326, 212/740-9100

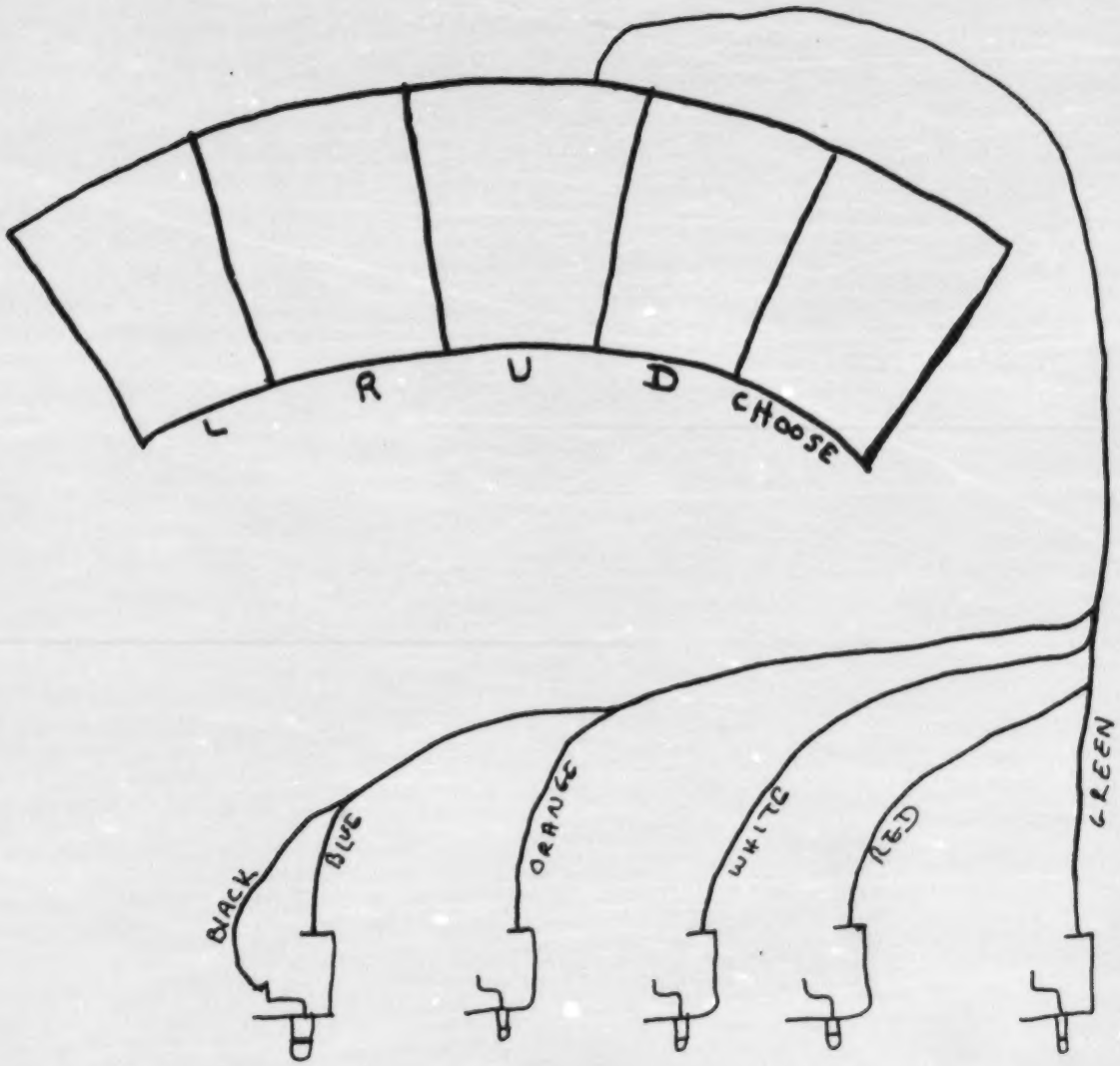
Model 100 Communication Electronic System	$1,325.00
EI-2 Model 100/Apple II Computer Interface	$ 295.00

III. Head Pointer

1. Maddak, Inc.
   Pequannock, New Jersey
   201/694-0500

H71830 Adjustable Head Pointer (Available from surgical supply stores)	$ 22.50

PRENTKE-ROMICH COMPANY
Arm Slot Control ASC-5



(3) Radio Shack 274-286 Miniature 1/8" Phone Plugs (2 per pkg.)

For use with I.O.R. STEP (4-D)/T Communication Program

APPENDIX

PRODUCT LIST

1. TALK II (Includes 24-page manual) — $ 90.00

   (DOS 3.3; Applesoft)

   Requires: Apple II Plus, 48K RAM
   Disk Drive and Controller Card

   Optional: Echo II Speech Synthesizer (for speech output)
   Printer
   Single switch hardware interface (for single switch operation)

2. SINGLE SWITCH ASSESSMENT PROGRAM — $ 40.00

   (DOS 3.3; Applesoft)

   Requires: Apple II Plus, 32K RAM
   Disk Drive and Controller Card
   Patch Cord for game paddle port

3. FLORIDA SCANNER — $ 45.00

   (DOS 3.3; Applesoft)

4. SINGLE SWITCH GAMES — (cost per game)

   (DOS 3.3; Applesoft)

   All games can be played using the buttons on the game paddles. Other single switches must use a patch cord to the game paddle port. There is currently a library of 9 single switch games available for ages 6 and up. See game library listing.

5. THERAPY DATA COLLECTOR — $ 40.00

   (DOS 3.3; Applesoft)

   Printer optional

6. THE /s/ METER — $ 20.00

   (DOS 3.3; Requires Integer BASIC)

   Requires: Heuristics Speechlink for the Apple II

7. TALK II MANUAL (24 pages)--if purchased separately $ 3.00

ORDER FROM: G. Evan Rushakoff
ASB 442
University of Florida
Gainesville, Florida 32611

Should any program not suit your particular needs it may be returned within four weeks of receipt at no charge.

I.O.R. PRODUCT LIST

(For use with Apple-II Plus Microcomputer)

WORD-COM/PICTURE-COM SYSTEM

March 1982
(Prices subject to change)

In order to select a Word-Com or Picture-Com system for a specific user, several elements must be selected from this product list. They are (a) an appropriate vocabulary; (b) the most effective selection technique; and (c) a user interface (switch). Because every user will have different abilities, it is strongly advised that this system is prescribed by a specialist in the field of augmentative communication. The Evaluation System (product code EVAL) can greatly simplify the task of prescribing an appropriate augmentative communication device.

CODE	VOCABULARIES	
VWC1	350-word vocabulary at the first/second grade level. Organized grammatically. Includes alphabet/punctuation screen. Seven screens, accessed sequentially. (Minimum computer equipment required for use: 16K Apple II-Plus, cassette recorder, video monitor.) Available on cassette or diskette.	$ 35.00
VWC2	1,000 word and phrase vocabulary. Organized alphabetically. Includes alphabet/punctuation screen. 50 screens accessed sequentially or via "Jump." (Equipment required for use: 48K Apple-II Plus, one disk drive.) Available on diskette only.	$ 55.00
VWCX	Customized vocabulary and/or organization specified by buyer.	$ 45.00 (and up)

OPTIONS FOR VWC1, VWC2, VWCX

Pr	Includes "Print" command for optional line printer.	(no extra charge)
Md	Allows user to alter scan or selection speeds (when using timed techniques), and to alter vocabulary. Requires 48K Apple-II Plus and one disk drive.	$ 20.00

CODE	VOCABULARIES	
VPC1	Bliss Symbol vocabulary, organized grammatically. Seven screens, 16 symbols/screen, accessed sequentially. A basic communication vocabulary. (Equipment required for use: 48K Apple-II Plus and one disk drive.) Available on diskette only.	$ 40.00
VPC2	Line drawing vocabulary, organized grammatically. Seven screens, 16 pictures/screen. Accessed sequentially. Same basic vocabulary as VPC1. (Equipment required for use: 48K Apple-II Plus and one disk drive.) Available on diskette only.	$ 40.00
VPCX	Customized vocabulary and organization specified by buyer. Can be ordered with Bliss Sympols or line drawings. Maximum 14 screens, 25 symbols or drawings/screen.	$ 65.00 (and up)

OPTIONS FOR VPC1, VPC2, VPCX (no extra charge)

Lb	Symbols or drawings labeled with English equivalent.
N1	No labels on symbols or drawings.
Pr	English equivalents can be printed via optional printer.

SELECTION TECHNIQUES

Any of the following selection techniques can be used with any of the above vocabularies. When ordering an individualized Word-Com or Picture-Com System, specify selection technique desired.

CODE	SINGLE INPUT
STSA	Timed sequential stepping
STSB	Sequential scanning
STSC	Timed row/column stepping
STSD	Row/column scanning

DOUBLE INPUT

STDA	Row/column stepping
STDB	Two-dimensional stepping
STDC	Two-dimensional stepping (timed)
STDD	Two-dimensional scanning

TRIPLE INPUT

STTA	Two-dimensional stepping

POSITIONAL INPUT (4/5)

STFA	Directional stepping (timed) (4 input)
STFB	Directional stepping (5 input)
STFC	Directional scanning

CODE	PROPORTIONAL INPUT (JOYSTICK/PADDLE)
STPA	One-dimensional pointing (timed)
STPB	One-dimensional pointing
STPC	Two-dimensional pointing (timed)
STPD	Two-dimensional pointing

COMMUNICATION SETS

INPUT SETS

An Input Set includes any one vocabulary (VWC1, VWC2, VPC1 or VPC2), vocabulary options (if desired), and all selection techniques requiring a given method of input (i.e. single input, double input, etc.). (Equipment required: 48K Apple II-Plus and one disk drive.) Available on diskette only.

CODE

CMSS Single Input Series (includes selection techniques STSA, STSB, STSC, STSD)

CMSD Double Input Series (includes selection techniques STDA, STDB, STDC, STDD)

CMST Triple Input Series (includes selection technique STTA)

CMSF Positional (4/5) Input Series (includes selection techniques STFA, STFB, STFC)

CMSP Proportional Input Series (includes selection techniques STPA, STPB, STPC, STPD)

With Vocabulary VWC1: Price: $55.00/$75.00 if option code Md is selected
With Vocabulary VWC2: Price: $75.00/$95.00 if option code Md is selected
With Vocabulary VPC1 or VPC2: Price: $65.00

CMSZ Complete Set

A complete set includes any one vocabulary (VWC1, VWC2, VPC1, or VPC2), vocabulary options (if desired), and all selection techniques using all input methods. (Equipment required: 48K Apple II-Plus and one disk drive.) Available on diskette only.

Price: $180.00
If option code Md is selected: $200.00

SWITCHES

All switches are built individually to order. Custom switches can be designed on request to adapt to almost any handicap.

CODE		
SWHA	Push Button (variety)	$ 15.00
SWHB	Gooseneck treadle (either table top or clamp)	$ 25.00

SWHC	Position (head or limb)	$ 20.00
SWHD	Cushion	$ 20.00
SWHE	Eyebrow	$ 30.00
SWHF	Treadle	$ 15.00
SWHG	Light touch	$ 15.00
SWHZ	Switch Assortment: Six single input switches including push button, gooseneck treadle, position, cushion, eyebrow, and treadle switches	$110.00

IBOX I.O.R. SWITCH INTERFACE BOX

This box allows any combination of user interfaces--switches, levers, joysticks--to be plugged into the Apple-II Plus microcomputer. It is a necessary adjunct for use with any of the switches listed above.

Price: $ 15.00
If ordered without a program: $ 20.00

EVAL EVALUATION SYSTEM

This system is designed for use by a specialist in the field of augmentative communication. It allows the specialist to test a handicapped candidate for use of an augmentative communication device by using the computer, which simulates many different devices. The computer provides step-by-step instructions which allow the tester to determine the full capabilities of the user. Use of this system can greatly simplify the prescription of the most appropriate augmentative communication device for any potential candidate. I.O.R. Enterprises strongly recommends this system for any center which is involved in evaluating handicapped individuals for augmentative communication devices.

The Evaluation System includes: vocabularies VWC1, VPC1, and VPC2; all selection techniques listed on Page 2 of this product list; Evaluation Programs which lead the tester through a series of options to evaluate a handicapped user; support programs which allow the augmentative communication specialist to personalize the vocabularies or make other alterations to the programs in order to enhance the effectiveness of the testing procedure; an assortment of six switches; an I.O.R. Interface Adapter; and a user's manual. (Minimum equipment required: 48K Apple II-Plus microcomputer, one disk drive, and video monitor. Optional: Apple-II graphics tablet.) Available on diskette only.

Price: $460.00

EZBS EZBAS PROGRAM

This program allows the handicapped user to program an Apple-II Plus microcomputer using any of the selection techniques. The world of computer programming is now open to the most severely motorically-handicapped individuals. (Equipment required: 48K Apple-II Plus computer, one disk drive, video monitor.) Available on diskette only.

Price: $150.00

TCTD TIMER CONTROL TRAINING DEVICE

A simple electronic aid for evaluation and training of individuals with severe motor or intelligence handicaps. The device accepts input from any single switch. When the switch is activated, the TCTD turns on a toy or tape recorded for a preset, variable time.

Price: $35.00

ITAD INSTANT TOY ADAPTER

This adapter converts any battery-operated toy to "on/off" control via any switch which provides an on/off effect and is equipped with a miniature phono plug. A simple and economical means for providing toys for profoundly handicapped children.

Price: $ 1.50

ADDENDUM & ERRATA SHEET

A RESOURCE MANUAL FOR THE DEVELOPMENT AND EVALUATION
OF SPECIAL PROGRAMS FOR EXCEPTIONAL STUDENTS

VOLUME III-I:
Computer Assisted Instruction and Support for the Handicapped Interim Report
Bureau of Education for Exceptional Students

March 1983

Page 3, Switch Controlled Programs, first 5 items belong in the following section, Public domain programs, after University of Washington.

Page 4, 2nd paragraph: delete last sentence "Every disk . . .".

Page 5, I.B. Talk II: add "A speech output version using the Type 'N Talk speech synthesizer is also available." Change G. Evan Rushakoff's address to:

College of Arts & Sciences
Dept. of Speech, Box 3W
Las Cruces, NM 88003
(505)646-2801

Page 7, II.G. Note same address change as above.

Page 8, top of page: change NOTE: (1) to "LOGOSCAN, Copyright State of Florida, is available at no charge for non-commercial use.

Page 30: The capabilities of items 2 and 6 can be combined (add item 7):

7. Parallel Interface Card: Grapper+ Interface Card with graphics-Software in ROM — $225.00

Orange Micro, Inc.
3150 E. La Palma, Suite G
Anaheim, CA 92806

Page 33, Item 1: Change price range to $50.00-$100.00
Item 2: Delete

Page 34, Third line from the end: change "printer" to "pointer".

Page 36, add: IV Adaptive Firmware Card and Interface Box $300.00
See attached description sheet.

Page 40, Item 7: Note same address change as on page 5.

Copyright
State of Florida
Department of State
1983

EC 160 500

ADAPTIVE PERIPHERALS * 4529 BAGLEY AVE N * SEATTLE, WA.98103

Thank you for your interest in our software for people with physical disabilities and in the Adaptive Firmware Card, as described in BYTE Magazine (Schwejda & Vanderheiden, Sept. 1982), Proceedings of the Johns Hopkins First National Search (Schwejda & McDonald, 1981), and the Maplewood Apple II Computer Project Report (McDonald, 1981).

We are pleased to announce that the Adaptive Firmware Card is now available. At this time, we are offering the card on a pre-commercial, prototype basis.

The Adaptive Firmware Card allows users with physical disabilities to run off-the-shelf software for the Apple II (and Apple IIe) computer (from educational programs such as Logo to business-oriented software such as Visicalc) using any of 16 special input methods. These methods include SCANNING for single switch users, MORSE CODE for two-switch users, EXPANDED KEYBOARD capabilities for direct selectors, and ASSISTING FEATURES for people using the Apple keyboard with a headwand.

Two additional features, a SLOWDOWN MODE and GAME PADDLE EMULATION, permit many commercial arcade-type games to be played by means of one or two switches.

The card is easily installed by a non-technical person, and does not disrupt use of the computer by able-bodied individuals.

A more complete description of the card is attached.

The Adaptive Firmware Card, complete with interface box, disk of special-feature software, and operations manual is available for a limited time at a pre-commercial price of $300.00 (US dollars) from:

ADAPTIVE PERIPHERALS
4529 BAGLEY AVENUE N.
SEATTLE, WASHINGTON 98103

PHONE (206) 633-2610

Please specify version II or IIe.

Purchase orders are accepted. Allow 4-6 weeks for delivery.

The Adaptive Firmware Card is sold with a 30 day money-back guarantee and is warranteed for one year against defects in parts and labor.

ADAPTIVE FIRMWARE CARD DESCRIPTION

The Adaptive Firmware Card allows physically disabled users to run standard, unmodified software for the Apple II computer (such as Visicalc, Easywriter, Logo, etc.**) using any of 16 input routines, some of which require use of only a single switch. The complete interface consists of a specially designed printed-circuit card that is inserted in slot 7 of the Apple II and a small plastic box that snaps onto the side of the computer. (This contains the input jacks and the mode selection thumbwheel). The card is easily installed by a non-technical person; installation time may be as little as one minute.

A slightly modified, IIe version of the Adaptive Firmware Card will operate in the Apple IIe. This version is installed in slot 4; it is even easier to install than the original.

Special input methods available with either version are:

1	NORMAL	Keyboard input only.
2-3	SCANNING	Single switch traditional scanning. Alphabetical and speed-oriented groupings are available.
4-5	STEP SCAN	Each press of a single switch causes the cursor to move to the next item A pause indicates choice.
6-7	INVERSE SCAN	Cursor moves while switch is held down; release and wait to select item.
8-9	MORSE CODE	Single switch Morse code. Long and short switch closures form dit and dah. Optional tone change provides feedback.
10-12	MORSE CODE	Two switch Morse code (automatic keyer) Variations in tone lengths available.
13	ASSISTED KBD	Adds shift, control, and repeat key functions to Apple keyboard for one-finger typists and headstick users.
14-15	ASCII INPUT	For use with portable communication devices (i.e. Autocom, Express).
0	EXPANDED KBD	For use with membrane keyboard (e.g Unicorn Keyboard with 8 X 16 one-inch-square keypads) or matrix of switches.

All scanning modes use the Apple's own visual display. The second-to-bottom line of text or graphics is replaced by the scanning array when the switch is pressed. The line is restored after a character has been selected.

APPLE DISSEMINATION DISKS #44 & #45

Hollister Elementary School District* A Multi-Level Math Drill & Practice Package

APPLE DISSEMINATION DISK #44*

Level One--Easy one-digit addition facts to 10, counting to 20, and completing number sequences 1-20.

Level Two--Easy addition under 10, easy subtraction under 10, counting 1-20, completing number sequences 1-20.

Level Three--Addition to 100, horizontal addition and subtraction, counting to 100.

Level Four--3 addend addition.

Level Five--Missing addend, place value regrouping, subtraction over 10, addition under 100.

Level Six--Regrouping (choosing between three answers), addition and subtraction, sequences by 2, 5, and 10.

Level Seven--Borrowing: regrouping to make more ones, regrouping for more tens, missing number.

Level Eight--Carrying 2 digit numbers.

Level Nine--Subtraction with borrowing.

Level Ten--Number sequences over 100, simple multiplication with use of addition, learning hundreds place, double digit adding (will need paper).

Level Eleven--Test: 20 multiple-choice questions, addition and subtraction.

Level Twelve--Less than, greater than, odd and even, double digit subtraction (need paper), missing number.

Level Thirteen--Sequences 2, 5, 10 under 100, place value to hundreds, 3 digit addition (paper).

Level Fourteen--Test: 25 questions, three digit addition, subtraction, single digit multiplication.

Level Fifteen--3 digit horizontal addition and subtraction, dollars and cents addition and subtraction (must respond with $), place value, greater than, less than.

Level Sixteen--Simple multiplication and division, 3 digit addition and subtraction.

Level Seventeen--4 digit addition and subtraction, 3 digit 3 addend addition, multiplication and division little (under 100)

APPLE DISSEMINATION DISK #45*

Level Eighteen--4 digit addition & subtraction, 3 digit 3 addend addition, multiplication with 2 digit times 1 digit, division without remainders.

Level Nineteen--Same as Level 18, division with remainders.

Level Twenty--Test: on all previously covered plus 4 addend addition (answers: a, b, c, d, and e--none of the above).

Level Twenty-one--Same as Level 19, 3 digit times 1 digit.

Level Twenty-two--Fractions.

Level Twenty-three--Horizontal 3 number 3 digit addition and subtraction (how 'bout a calculator?), story problems, addition and subtraction, thousands place, sequences, greater than, less than, (lists results for teacher).

Level Twenty-four--Addition and subtraction, addition and subtraction of hours and minutes, 3 number money problems, 2 digit times 3 digit, story problem multiplication.

Level Twenty-five--Division of decimals (lists results for teacher).

Level Twenty-six--4 digit multiplication, decimal addition and subtraction, spelling numbers (lists results for teacher).

* For information on this disk - contact: Richard Pitschka
Rancho San Jousto School
1201 Rancho Drive
Hollister, CA 95023
408-637-1601

6

SECONDARY IDENTIFICATION 30

B INTBASIC
A INTBASICBOOT
I AFRICA QUIZ
A AFRICAN COCOA
A ATOM 20
A CALCULATOR
I D N A
B DROP IN/A$6000
A HELLO
A MENU
B VOLUME 10.0
A MOIS 82 (48K)
B MOIS DATA 82 FP

SECONDARY IDENTIFICATION 31

B INTBASIC
A INTBASICBOOT
A AIRPLANE.1
A AIRPLANE.2
A AWAY IT GOES.PAGE 2
A BOGGLE
A CHEMFORM
A COLOR DITHERING
B COMPUTER TREE
A COMPUTER TREE HIRES DEMO
A CONVERTER
A DIAGONAL PLOTTER
B DROP IN/A$6000
B DROP IN/A$/6000/L$200
B FLIP/A$300
A GRADE STATS
A GRAPHICS SWITCH DEMO
A GRAPHING 2 RATIONAL FUNCTIONS
A GRAPHING RATIONAL FUNCTIONS
A HELLO
A HERE IT COMES.PAGE 2
A HI-RES GRAPHICS INTRODUCTION
A LOW-RES GRAPHICS INTRODUCTION
A PAYMAR TEST
A POLAR GRAPHER
A RANDOM BRIDGE HANDS
B SEPERATE/A$6000
B SHAKE/A$6000
A SIMPLE POLAR GRAPHER
A TRAJECTORY WITH TRAIL
A TRAJECTORY WITHOUT TRAIL
B VOLUME 11.0
A WINDMILL.1
A WINDMILL.2
I MENU

Public Domain Software

Project CAISH is willing to share any public domain software that is currently available to the project.

The only requirements are:

1) The software will not be distributed commercially.
2) Blank disks are sent to Project CAISH for copying.
3) Return postage is included with blank disks (library rate: less than $1.00)
4) For the software that requires a single-user licensing fee; the fee is included with the blank disk, and you must agree not to recopy the disk without submitting an additional license fee for each copy made.

Apple Computer, Inc. - Apple Presents Apple: An Introduction to the Keyboard
Micro Lab - APPLESOFT TUTORIAL
INTEGER BASIC
State of Florida, 1982 - LOGOSCAN
Vagabondo Enterprises - FIRE ORGAN
University of Houston - Alphabet-Disk #C
ITV&R Florida D.O.E. Fact Sheet 800 - FL Computer Courseware Vol. 1 (FL Dissem. Only)
" " " " " " " " " Vol. 2 (" " ")

Sun Coast Computer Association (SCCA) (pages 22-27)

#281	#284	#287	#290	#293	#296	#299
#282	#285	#288	#291	#294	#297	#300
#283	#286	#289	#292	#295	#298	

University of Washington (pages 10-12)

Motor Training Games	Special Inputs
Academics w/ Scanning-Math	Phonics, Text, Graphics
Academics w/ Scanning-Language Arts	Math

Michigan Association for Computer Users in Learning (MACUL) (pgs 19-21 and errata)

Educational	Vol. 1.1	Games	Vol. 5.1	Educational	Vol. 9.0
Utility	Vol. 2.1	Games	Vol. 6.1	Educational	Vol. 10.0
Math	Vol. 3.1	Educational	Vol. 7.0	Graphics	Vol. 11.0
Music	Vol. 4.1	Educational	Vol. 8.0		

CUE/SOFTSWAP (pages 13-18 and errata)

#1	#3	#5	#7	#45
#2	#4	#6	#44	

BLOCKS/CSDF (3.2.1)

CopyCat		Transportation	380	Tools, Side 1	621
Lesson Disk (use in D2)		Holidays	394	Tools, Side 2	621
Author (D1)		Manual Commun.	419	Food	641
Class Disk (D2)		Mathematics	510	Buildings	725
Lesson Sampler (D2)		Astronomy	520	Decorative Arts	740
Shaper		Time	529	Cartoons	741
Edu-Paint Graphics Tool		Earth Sciences	550	Scenery	751
Paint Chip		Plants	581	Recreation	790
CSDF Utilities		Animals	590	Maps, Side 1	912
Math I		People, Side 1	599	Maps, Side 2	912
Math II		People, Side 2	599	Maps, Side 3	912
Symbols	001	Applied Sciences	600		

$2.00 License Fee:

Edmund Skellings - Electric Poet (2 disks)
Herb Nickles - Spelling Arcade

W.R. Brown, Proj. Mgr., CAISH
3450 Gocio Road
Sarasota, FL 33580
(813) 355-3567

State of Florida
Department of Education
Tallahassee, Florida
Ralph D. Turlington, Commissioner
Affirmative action/equal opportunity employer

FLORIDA: A STATE OF EDUCATIONAL DISTINCTION. "On a statewide average, educational achievement in the State of Florida will equal that of the upper quartile of states within five years, as indicated by commonly accepted criteria of attainment." Adopted, State Board of Education, Jan. 20, 1981